

What is claimed is:

1 1. A method of accessing a database, the method comprising:
2 (a) in response to a search request, generating a result set including
3 identifications of a subset of a plurality of records in a database that match the
4 search request;
5 (b) ordering the identifications of the records in the result set using a
6 user feedback parameter associated with each record in the result set; and
7 (c) for each of the plurality of records, selectively updating the user
8 feedback parameter associated therewith in response to detecting multiple
9 accesses thereto by a user.

1 2. The method of claim 1, wherein selectively updating the user feedback
2 parameter includes increasing a weight for the user feedback parameter associated
3 with a first record in response to the number of times a user accesses the first record.

1 3. The method of claim 1, further comprising increasing a weight for the user
2 feedback parameter associated with a first record in response to the first record being
3 the most recently accessed record in the result set.

1 4. The method of claim 1, wherein the user feedback parameter associated
2 with each record includes a plurality of weights, each weight associated with a
3 keyword in the associated record, and wherein ordering the records in the result set
4 using the user feedback parameter associated with each record in the result set
5 includes ordering the records using any weight associated with a keyword matching
6 the search request.

1 5. The method of claim 4, wherein selectively updating the user feedback
2 parameter includes increasing a first weight for the user feedback parameter
3 associated with a first record in response to receipt of a search request matching a first
4 keyword associated with the first weight.

1 6. The method of claim 1, wherein generating the result set includes accessing
2 a search request data structure that includes a plurality of search request records, each
3 including a search request parameter identifying a unique combination of keywords,
4 and a result set parameter identifying a subset of records in the database that match the
5 unique combination of keywords.

1 7. The method of claim 1, wherein ordering the identifications of the records
2 in the result set using the user feedback parameter associated with each record in the
3 result set includes:

4 (a) partitioning the result set into a plurality of relevance groups, with
5 each relevance group including identifications of records having like
6 relevancies to the search request; and

7 (b) sorting the identifications of records within each relevance group
8 according to the user feedback parameters associated therewith.

1 8. The method of claim 1, wherein each record in the database includes a
2 Uniform Resource Identifier (URL) that identifies a document stored on a computer
3 network, wherein selectively updating the user feedback parameter includes
4 selectively updating the user feedback parameter associated with a first record in the
5 database in response to detecting multiple accesses to the document stored at the URL
6 associated with the first record.

1 9. The method of claim 8, wherein generating the result set includes
2 generating at least one hypertext document including a plurality of hypertext links,
3 each of which configured to access a document identified by a record in the result set.

1 10. The method of claim 9, wherein generating the hypertext document
2 includes generating a script associated with at least one of the records in the result set,
3 the script configured to generate a notification that the associated record has been
4 accessed by a user, and wherein detecting multiple accesses to the document stored at
5 the URL associated with the first record includes receiving the notification.

11. An apparatus, comprising:

(a) a memory within which is resident a plurality of records from a database, each record associated with a user feedback parameter;

(b) a first program, resident in the memory, the first program configured to, in response to a search request, generate a result set including identifications of a subset of the plurality of records that match the search request, and to order the identifications of the records in the result set using the user feedback parameter associated with each record in the result set; and

(c) a second program, resident in the memory, the second program configured to, for each of the plurality of records, selectively update the user feedback parameter associated therewith in response to multiple accesses thereto by a user.

1 12. A program product, comprising:

2 (a) a first program configured to, in response to a search request,
3 generate a result set including identifications of a subset of a plurality of
4 records in a database that match the search request, and to order the
5 identifications of the records in the result set using a user feedback parameter
6 associated with each record in the result set;

7 (b) a second program configured to, for each of the plurality of
8 records, selectively update the user feedback parameter associated therewith in
9 response to multiple accesses thereto by a user; and

10 (c) a signal bearing medium bearing the first and second programs.

1 13. The program product of claim 12, wherein the signal bearing medium
2 includes at least one of a recordable medium and a transmission type medium.

1 14. A method of accessing a database, the method comprising:

2 (a) in response to a search request, generating a result set including
3 identifications of a subset of a plurality of records in a database that match the
4 search request;

5 (b) ordering the identifications of the records in the result set using a
6 user feedback parameter associated with each record in the result set; and

7 (c) for each of the plurality of records in the database, selectively
8 updating the user feedback parameter associated therewith in response to
9 detecting that the record is the most recently accessed record in the result set.

1 15. The method of claim 14, wherein selectively updating the user feedback
2 parameter includes increasing a weight for the user feedback parameter associated
3 with a first record in response to the first record being the most recently accessed
4 record in the result set.

1 16. The method of claim 14, further comprising increasing a weight for the
2 user feedback parameter associated with a first record in response to the number of
3 times a user accesses the first record.

1 17. The method of claim 14, wherein the user feedback parameter associated
2 with each record includes a plurality of weights, each weight associated with a
3 keyword in the associated record, and wherein ordering the records in the result set
4 using the user feedback parameter associated with each record in the result set
5 includes ordering the records using any weight associated with a keyword matching
6 the search request.

1 18. The method of claim 17, wherein selectively updating the user feedback
2 parameter includes increasing a first weight for the user feedback parameter
3 associated with a first record in response to receipt of a search request matching a first
4 keyword associated with the first weight.

1 19. The method of claim 14, wherein generating the result set includes
2 accessing a search request data structure that includes a plurality of search request
3 records, each including a search request parameter identifying a unique combination
4 of keywords, and a result set parameter identifying a subset of records in the database
5 that match the unique combination of keywords.

1 20. The method of claim 14, wherein ordering the identifications of the
2 records in the result set using the user feedback parameter associated with each record
3 in the result set includes:

4 (a) partitioning the result set into a plurality of relevance groups, with
5 each relevance group including identifications of records having like
6 relevancies to the search request; and

7 (b) sorting the identifications of records within each relevance group
8 according to the user feedback parameters associated therewith.

1 21. The method of claim 14, wherein each record in the database includes a
2 Uniform Resource Identifier (URL) that identifies a document stored on a computer
3 network, wherein selectively updating the user feedback parameter includes
4 selectively updating the user feedback parameter associated with a first record in the
5 database in response to detecting that the document stored at the URL associated with
6 the first record is the most recently accessed document identified in the result set.

1 22. The method of claim 21, wherein generating the result set includes
2 generating at least one hypertext document including a plurality of hypertext links,
3 each of which configured to access a document identified by a record in the result set.

1 23. The method of claim 22, wherein generating the hypertext document
2 includes generating a script associated with at least one of the records in the result set,
3 the script configured to generate a notification of when the associated record was
4 accessed by a user, and wherein detecting that the document stored at the URL

- 5 associated with the first record is the most recently accessed document identified in
- 6 the result set includes receiving the notification.

IBM CORPORATION
ARMONK, NEW YORK 10504
U.S. PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20540
TELEPHONE (914) 492-4000
FAX (914) 492-4001
WWW.INTERNET.COM

1
2
3
4
5
6
7
8
9
10
11
12

2
3

4
5
6
7
8

9
10
11
12

1 25. A program product, comprising:

2 (a) a first program configured to, in response to a search request,
3 generate a result set including identifications of a subset of a plurality of
4 records in a database that match the search request, and to order the
5 identifications of the records in the result set using a user feedback parameter
6 associated with each record in the result set;

7 (b) a second program configured to, for each of the plurality of
8 records, selectively update the user feedback parameter associated therewith in
9 response to detecting that the record is the most recently accessed record in the
10 result set; and

11 (c) a signal bearing medium bearing the first and second programs.

1 26. The program product of claim 25, wherein the signal bearing medium
2 includes at least one of a recordable medium and a transmission type medium.

1 27. A method of accessing a database, the method comprising:

2 (a) in response to a search request, generating a result set including
3 identifications of a subset of a plurality of records in a database that match the
4 search request;

5 (b) ordering the identifications of the records in the result set using a
6 user feedback parameter associated with each record in the result set, each user
7 feedback parameter including a plurality of weights, each weight associated
8 with a keyword, wherein ordering the identifications of the records includes
9 using only those weights associated with keywords that match the search
10 request; and

11 (c) for each of the plurality of records in the database, selectively
12 updating at least one weight for the user feedback parameter associated
13 therewith in response to user interaction with the record.

1 28. The method of claim 27, wherein selectively updating at least one weight
2 for the user feedback parameter includes, in response to user interaction with a first
3 record, increasing any weight associated with the first record that is further associated
4 with a keyword matching an active search request for the user.

1 29. The method of claim 27, wherein selectively updating at least one weight
2 for the user feedback parameter includes increasing a first weight for the user
3 feedback parameter associated with a first record in response to detecting multiple
4 accesses thereto by a user.

1 30. The method of claim 27, wherein selectively updating at least one weight
2 for the user feedback parameter includes increasing a first weight for the user
3 feedback parameter associated with a first record in response to the first record being
4 the most recently accessed record in the result set.

1 31. The method of claim 27, wherein generating the result set includes
2 accessing a search request data structure that includes a plurality of search request

3 records, each including a search request parameter identifying a unique combination
4 of keywords, and a result set parameter identifying a subset of records in the database
5 that match the unique combination of keywords.

1 32. The method of claim 27, wherein ordering the identifications of the
2 records in the result set using the user feedback parameter associated with each record
3 in the result set includes:

4 (a) partitioning the result set into a plurality of relevance groups, with
5 each relevance group including identifications of records having like
6 relevancies to the search request; and

7 (b) sorting the identifications of records within each relevance group
8 using the weights from the user feedback parameters associated therewith.

1 33. The method of claim 27, wherein each record in the database includes a
2 Uniform Resource Identifier (URL) that identifies a document stored on a computer
3 network, wherein selectively updating the user feedback parameter includes
4 selectively updating at least one weight for the user feedback parameter associated
5 with a first record in the database in response to user interaction with the first record.

1 34. The method of claim 33, wherein generating the result set includes
2 generating at least one hypertext document including a plurality of hypertext links,
3 each of which configured to access a document identified by a record in the result set.

1 35. An apparatus, comprising:

2 (a) a memory within which is resident a plurality of records from a
3 database, each record associated with a user feedback parameter;

4 (b) a first program, resident in the memory, the first program
5 configured to, in response to a search request, generate a result set including
6 identifications of a subset of the plurality of records that match the search
7 request, and to order the identifications of the records in the result set using the
8 user feedback parameter associated with each record in the result set, wherein
9 each user feedback parameter includes a plurality of weights, wherein each
10 weight is associated with a keyword, and wherein the first program is
11 configured to order the identifications of the records by using only those
12 weights associated with keywords that match the search request; and

13 (c) a second program, resident in the memory, the second program
14 configured to, for each of the plurality of records, selectively update the user
15 feedback parameter associated therewith in response to user interaction with
16 the record.

1 36. A program product, comprising:

2 (a) a first program configured to, in response to a search request,
3 generate a result set including identifications of a subset of a plurality of
4 records in a database that match the search request, and to order the
5 identifications of the records in the result set using a user feedback parameter
6 associated with each record in the result set, wherein each user feedback
7 parameter includes a plurality of weights, wherein each weight is associated
8 with a keyword, and wherein the first program is configured to order the
9 identifications of the records by using only those weights associated with
10 keywords that match the search request;

11 (b) a second program configured to, for each of the plurality of
12 records, selectively update the user feedback parameter associated therewith in
13 response to user interaction with the record; and

14 (c) a signal bearing medium bearing the first and second programs.

1 37. The program product of claim 36, wherein the signal bearing medium
2 includes at least one of a recordable medium and a transmission type medium.

Sub C1
1 38. A method of processing search requests submitted to a search engine, the
2 method comprising:
3 (a) receiving a search request that specifies a plurality of keywords;
4 (b) accessing a search request data structure in response to the search
5 request, the search request data structure including a plurality of search request
6 records, each search request record including a search request identifier
7 identifying a unique combination of keywords, and a result set identifier
8 identifying a subset of a plurality of records in a database that match the
9 unique combination of keywords, wherein accessing the search request data
10 structure includes searching the search request data structure to locate a search
11 request record including a search request identifier that matches the plurality
12 of keywords in the search request; and
13 (c) generating a result set identifying the subset of records identified in
14 the result set identifier in the located search request record.

1 39. The method of claim 38, further comprising:
2 (a) for each of the plurality of records in the database, selectively
3 updating a user feedback parameter associated therewith in response to user
4 interaction with the record; and
5 (b) ordering the identifications of the subset of records in the result set
6 using the user feedback parameter associated with each record in the result set.

1 40. The method of claim 39, wherein the result set identifier for each search
2 request record further includes a copy of the user feedback parameter for each of the
3 subset of records identified thereby, and wherein selectively updating the user
4 feedback parameter includes updating each copy of the user feedback parameter in the
5 search request data structure.

1 41. The method of claim 40, wherein the result set identifier for each search
2 request record further includes a list of record identifiers, each of which identifying a
3 record in the associated subset of records, and each of which associated with the copy

4 of the user feedback parameter for the associated record, the method further
5 comprising ordering the list of record identifiers identified by the result set identifier
6 of a first search request record based upon the copies of the user feedback parameters
7 associated with the subset of records.

1 42. The method of claim 41, wherein the search request data structure
2 comprises a table, wherein each search request record comprises an entry in the table,
3 and wherein the result set identifier for each search request record comprises a linked
4 list of record identifiers.

1 43. The method of claim 42, further comprising sorting the table entries
2 responsive to frequency of access thereto.

1 44. The method of claim 43, further comprising:

- 2 (a) adding a new entry to the table in response to receiving a search
3 request not matching any existing entry in the table; and
4 (b) removing an entry from the table in response to a frequency of
5 access therefor falling below a predetermined threshold.

1 45. An apparatus, comprising:

2 (a) a memory within which is resident a search request data structure,
3 the search request data structure including a plurality of search request records,
4 each search request record including a search request identifier identifying a
5 unique combination of keywords, and a result set identifier identifying a subset
6 of a plurality of records in a database that match the unique combination of
7 keywords;

8 (a) a program, resident in the memory, the program configured to, in
9 response to a search request that specifies a plurality of keywords, search the
10 search request data structure to locate a search request record including a
11 search request identifier that matches the plurality of keywords in the search
12 request, and to generate a result set identifying the subset of records identified
13 in the result set identifier in the located search request record.

1 46. A program product, comprising:

2 (a) a memory within which is resident a search request data structure, ;

3 (a) a program configured to, in response to a search request that
4 specifies a plurality of keywords, search a search request data structure to
5 locate a search request record including a search request identifier that
6 matches the plurality of keywords in the search request, the search request data
7 structure including a plurality of search request records, each search request
8 record including a search request identifier identifying a unique combination
9 of keywords, and a result set identifier identifying a subset of a plurality of
10 records in a database that match the unique combination of keywords, and the
11 program further configured to generate a result set identifying the subset of
12 records identified in the result set identifier in the located search request
13 record.

1 47. The program product of claim 46, wherein the signal bearing medium

2 includes at least one of a recordable medium and a transmission type medium.

ADD B1